



# CANUNDA 塑形雷射光束

## Application note

Flexible high-power laser beam shaping

### Canunda-HP

Canunda-HP is specially designed for high-power beam reshaping including strongly multimode beams up to 10 kW CW. It is carefully designed to minimize optical losses and manage thermal effects.

### Canunda-MP

Canunda-MP is a versatile mid-power beam-shaper based on the CAILabs R&D multiplexer platform. It can reshape up to ten singlemode beams from lasers operating either in pulsed or continuous regime with up to 10 W of total average power. Canunda-MP can reshape beams with different wavelengths in the NIR range with minimal beam quality degradations, and preserving theoretical maximum depth of field.

	Canunda-HP	Canunda-MP
Maximum handling power (total)	10 kW	50 W CW or pulsed
Wavelength (μm)	1030 – 1080	805, 1030, 1550...
Maximum input pulse energy	-	100 μJ
Input	Up to 3 free space inputs	Up to 10 single mode fibers or free space beams
Beam type	Multimode	Singlemode
Outputs	Single beam, diffraction limited	Single beam, diffraction limited
Dimensions (mm <sup>3</sup> )	400 x 172 x 170	150 x 100 x 52

Table 6: Canunda-HP and Canunda-MP specifications

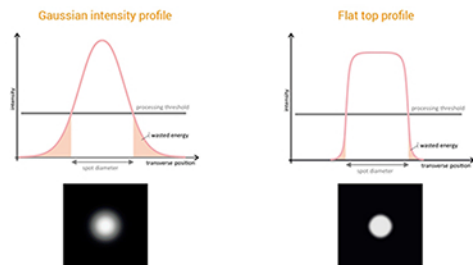


Figure 1 : Gaussuan and flat-top beam profile comparison

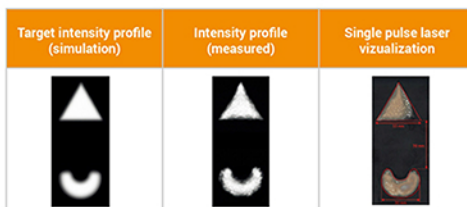


Figure 2 : Example of multimode beam shaping achieved with a MPLC system

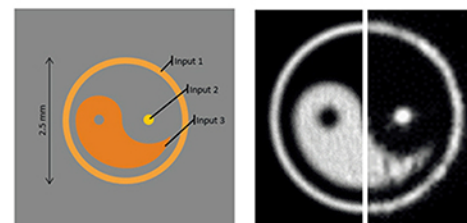


Figure 3 : Example of multiple singlemode lasers shaping  
Left : target shape; right : beam simulation and measurement

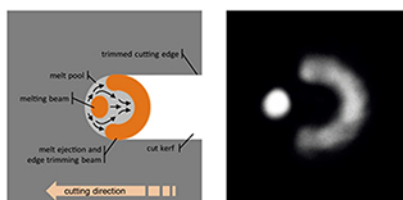


Figure 4 : Improved cutting, beam target (left) and result (right, using MPLC)

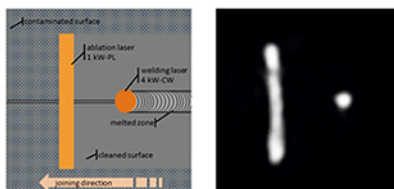


Figure 5 : Pre-joining ablation, beam target (left) and result (right, using MPLC)



Figure 6 : Measured circle beam profile (left) and Bessel beam at far field (right)

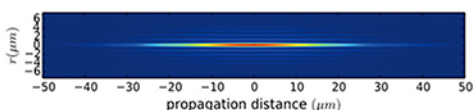


Figure 7 : Bessel beam longitudinal intensity profile (simulation)



Figure 8 : Non-coherent combiner principle

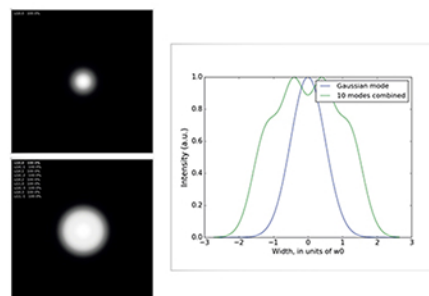


Figure 9 : left : single Gaussian and 9 combined LG modes beams  
right : intensity vs. Width plot for single Gaussian and 9 combined LG mode beams (simulation)